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July 3, 2020

Ms. Luly Massaro, Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

Re: *Providence Water Supply Board – Docket 4994*

Dear Ms. Massaro:

Enclosed herewith please find an original and nine copies of the following document:

1. Bristol County Water Authority's Response to the Rhode Island Public Utilities Commission's Data Request (Set 1).

Please be advised that an electronic copy of this document has been sent to the service list. Thank you for your attention to this matter.

Sincerely,



Joseph A. Keough, Jr.

JAK/kf
Enclosures

cc: Service List

COMM. 1-1: Assume that the PUC decided to implement individual rates for wholesale customers in this docket: Please provide what BCWA believes would be the appropriate rate for each wholesale customer for each of the rate years. Please explain your position and methodology and how it is supported by generally accepted ratemaking principles.

Response: In response to this request, the BCWA submits the following exhibits:

Exhibit A – This exhibit is taken from Exhibit B to Michael Maker's surrebuttal testimony and is an update to "Schedule HJS-22: Proposed Rates," which was originally prepared by Harold Smith. This schedule shows the wholesale rates that result from using Providence's rebuttal revenue requirement and incorporating just the peaking factors for each wholesale customer. This schedule does not incorporate any other rate design or cost of service revisions the BCWA recommends.

Exhibit B - This exhibit is taken from Exhibit C to Michael Maker's surrebuttal testimony and is an update to "Schedule HJS-22: Proposed Rates," which was originally prepared by Harold Smith. This schedule shows the wholesale rates that result from using Providence's rebuttal revenue requirement, incorporating the peaking factors for each wholesale customer and eliminating the allocation of pumping and unidirectional flushing costs to the BCWA. This schedule does not incorporate any other rate design or cost of service revisions the BCWA recommends.

Exhibit C – This exhibit updates several schedules originally prepared by Harold Smith and they include all of the BCWA's suggested changes (highlighted in green) to Providence's Cost of Service Model as follows:

1. Incorporation of peaking factors for all wholesale customers:
 - These factors are entered on Schedule HJS-16a, and are linked to Schedules HJS-16c, 17, 18, 19 and 22.
2. Elimination of pumping/unidirectional flushing costs to the BCWA:
 - These changes are made on Schedule HJS-17, and are linked to Schedules HJS-18, 19 and 22.

3. Elimination of the allocation of the Central Operations Facility's Commercial Services to all wholesale customers:
 - This change is made on Schedule HJS-13g.
 - Commercial Services are not allocated to Common To All, which is consistent with Providence's allocation in its original filing.
 - This change applies to Factor 22 ("As Central Operations Facility Square Footage") and is linked to Schedules HJS-13a, 14a, 17, 18, 19 and 22.
 - This change lowers costs for all wholesale customers.

4. Elimination of the allocation of Non-Revenue Water for Water Quality and Other Testing to all wholesale customers:
 - On Schedule HJS-15b, Non-Revenue Water for Water Quality and Testing is allocated 100% to Retail, which is consistent with Providence's allocation in its original filing.
 - This change is made on Schedule HJS-15b, and is linked to Schedules HJS-16a, 16c, 17, 18, 19 and 22.
 - This change lowers costs for all wholesale customers.

5. Revise the allocation of T&D Labor Costs to 5% for all wholesale customers:
 - On Schedule HJS-13d, the T&D Labor Allocation (Factor 13) and on Schedule HJS-13e: T&D Contract Services Allocation (Factor 14) are revised. The Common To All allocations are changed from 39.84% to 5.00% and the Retail Only allocations are changed to 60.16% to 95.00%.
 - These changes are linked to Schedules HJS-13a, 14a, 17, 18, 19 and 22.
 - These changes lower costs for all wholesale customers.

The resulting rates are set forth on Schedule HJS-22 in Exhibit C.

Please note that to allow an "apples-to-apples" comparison, these schedules use Providence's revenue requirement set forth in its rebuttal testimony. The schedules do not incorporate the BCWA's continuing recommendations regarding reductions to the revenue

requirement that Providence has not already adopted (i.e. reductions in funding for IFR and Insurance; increase in miscellaneous income from the sale of RECS; and, the elimination of inflation adjustments in the second and third steps of the increase). These schedules also do not incorporate the elimination of lead service replacement expense allocated to wholesale customers in years two and three of the multi-year rate plan. The KCWA initially made this suggestion, and the BCWA will wait to see how the KCWA proposes to implement this change.

The rates set forth in Exhibits A, B and C, and the methodology used to calculate them, are supported by generally accepted ratemaking principles, which were described in the direct and surrebuttal testimonies submitted by Michael R. Maker and Pamela M. Marchand. These testimonies are incorporated by reference herein.

According to generally accepted ratemaking principles, the predominant role of a cost of service study is to allocate the utility's costs to the customers who cause those costs to be incurred. Peaking factors play an important role in allocating peak demand costs to the customers who cause those costs to be incurred. In order to meet peak demand, a utility must incur costs to expand its system beyond what it would need to just meet average demand. Peaking factors equitably allocate the costs of additional capacity to those customers with peak demand.

The American Water Works Association's Manual M-1, Principles of Water Rates, Fees, and Charges (7th Edition) ("AWWA M-1 Manual"), p. 73, states that "Rate-making endeavors to assign costs to classes of customers in a nondiscriminatory, cost-responsive manner so that rates can be designed to closely meet the cost of providing service to such customer classes." In order to equitably distribute the extra cost components related to peak demand to a utility's various customers as part of a cost of service study, it is especially important to assign those costs using peaking factors.

As noted in my testimony, the cost of service model prepared by Harold Smith employs the Base-Extra Capacity Method as outlined in the AWWA M-1 Manual. This methodology is generally accepted under

ratemaking principles. Furthermore, peaking factors should be used to calculate rates using this methodology when they are available. As the AWWA M-1 Manual notes peaking factors are not always available:

“Customer class demand data are extremely beneficial to the rate practitioner in cost-of-service allocations and in designing rates. Very few water utilities have this type of information. To develop maximum-day and maximum-hour demand data on a customer or customer class basis can require significant financial resources.” (P. 365)

Thus, these factors should not be ignored when they are available.

In order to calculate individual rates for wholesale customers, the BCWA did not change Harold Smith's methodology. In fact, Mr. Maker did not change Mr. Smith's model at all. He simply incorporated the peaking factors for Providence's wholesale customers. Furthermore, the BCWA did not create the peaking factors. The peaking factors came directly from Providence.

Harold Smith, himself, recognized that in order to use the standard base/extra capacity approach, separate rates would have to be charged to each wholesale customer:

“It is important to note that the use of the standard approach would dictate the need for separate and different rates for each wholesale customer since it is likely the peaking characteristics of each individual wholesale customer are different than the peaking characteristics of the class as a whole.” (See Maker Direct, Exhibit 4, Docket 4618, Providence Response to Division 4-5)

Generally accepted ratemaking principles also dictate that rates should be fair, reasonable, non-discriminatory and should avoid providing subsidies to certain customers. According to the AWWA M-1 Manual, the main objective of a cost of service study is to recover a water utility's revenue requirement in a fair and equitable manner. The M-1 manual also sets forth two additional objectives: (1) “Fairness

STATE OF RHODE ISLAND PUBLIC UTILITIES COMMISSION

DOCKET NO. 4994

Response Of The Bristol County Water Authority
To The Rhode Island Public Utilities Commission's
Data Requests
Set 1

in the apportionment of total costs of service among the different ratepayers"; and, (2) the "Avoidance of undue discrimination (subsidies) within the rates." (AWWA M-1 Manual, p. 4, citing Bonbright, Daniels and Kamerschen 1988) The rates set forth in Exhibits A, B and C, using the readily available individual peaking factors for Providence's wholesale customers, meet these objectives and eliminate subsidies among wholesale customers. The rates set forth by Providence do not. Rather, as pointed out in Mr. Maker's surrebuttal testimony, Providence's proposed rates provide a generous discount to certain wholesale customers that is subsidized by other wholesale customers.

Finally, setting different rates for different wholesale customers is consistent with rates Harold Smith developed for Newport Water, which have been approved by the Commission.

Prepared by: Michael R. Maker

EXHIBIT A

Schedule HJS-22: Proposed Rates

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

Description	Existing Rates			Proposed FY 2021				Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	
Wholesale Charges													
Bristol County	1,494,845	\$ 1.350858	\$ 2,019,323	8.81%	\$ 1.469839	\$ 2,197,181	4.19%	\$ 1.531417	\$ 2,289,230	4.15%	\$ 1.594917	\$ 2,384,154	
East Providence	1,822,773	\$ 1.350858	\$ 2,462,307	18.94%	\$ 1.606746	\$ 2,928,733	4.19%	\$ 1.674059	\$ 3,051,430	4.15%	\$ 1.743474	\$ 3,177,958	
Greenville	421,521	\$ 1.350858	\$ 569,415	33.49%	\$ 1.803261	\$ 760,113	4.19%	\$ 1.878807	\$ 791,957	4.15%	\$ 1.956712	\$ 824,796	
Kent County	2,727,147	\$ 1.350858	\$ 3,683,989	7.06%	\$ 1.446249	\$ 3,944,134	4.19%	\$ 1.506838	\$ 4,109,371	4.15%	\$ 1.569320	\$ 4,279,766	
Lincoln	1,038,229	\$ 1.350858	\$ 1,402,499	25.52%	\$ 1.695579	\$ 1,760,399	4.19%	\$ 1.766614	\$ 1,834,149	4.15%	\$ 1.839867	\$ 1,910,202	
Smithfield	391,600	\$ 1.350858	\$ 528,996	37.35%	\$ 1.855413	\$ 726,580	4.19%	\$ 1.933144	\$ 757,020	4.15%	\$ 2.013302	\$ 788,410	
Warwick	3,466,644	\$ 1.350858	\$ 4,682,944	47.11%	\$ 1.987247	\$ 6,889,078	4.19%	\$ 2.070501	\$ 7,177,691	4.15%	\$ 2.156355	\$ 7,475,315	
Total Wholesale Revenue	11,362,760		15,349,475	25.13%	\$ 1.690278	19,206,219	4.19%	\$ 1.761090	20,010,847	4.15%	\$ 1.834114	20,840,601	
Wholesale (per million gallons)	8,499	\$ 1,805.96	\$ 15,349,475	25.13%	\$ 2,259.73	\$ 19,206,219		\$ 2,354.40	\$ 20,010,847		\$ 2,452.02	\$ 20,840,601	
Private Fire Service Charges													
3/4"	2	\$ 8.64	\$ 207	32.06%	\$ 11.41	\$ 274	5.67%	\$ 12.06	\$ 289	5.49%	\$ 12.72	\$ 305	
1"	9	\$ 10.21	\$ 1,103	32.03%	\$ 13.48	\$ 1,456	5.67%	\$ 14.24	\$ 1,538	5.49%	\$ 15.03	\$ 1,623	
1-1/2"	2	\$ 12.57	\$ 302	32.06%	\$ 16.60	\$ 398	5.67%	\$ 17.54	\$ 421	5.49%	\$ 18.51	\$ 444	
2"	68	\$ 18.64	\$ 15,210	32.03%	\$ 24.61	\$ 20,082	5.67%	\$ 26.01	\$ 21,221	5.49%	\$ 27.43	\$ 22,386	
4"	391	\$ 79.67	\$ 373,812	32.01%	\$ 105.17	\$ 493,458	5.67%	\$ 111.14	\$ 521,456	5.49%	\$ 117.24	\$ 550,090	
6"	1,245	\$ 129.89	\$ 1,940,557	32.00%	\$ 171.46	\$ 2,561,612	5.67%	\$ 181.19	\$ 2,706,957	5.49%	\$ 191.14	\$ 2,855,600	
8"	256	\$ 196.73	\$ 604,355	32.00%	\$ 259.69	\$ 797,768	5.67%	\$ 274.42	\$ 843,032	5.49%	\$ 289.49	\$ 889,325	
10"	4	\$ 274.06	\$ 13,155	32.00%	\$ 361.76	\$ 17,364	5.67%	\$ 382.29	\$ 18,350	5.49%	\$ 403.28	\$ 19,357	
12"	18	\$ 367.64	\$ 79,410	32.00%	\$ 485.29	\$ 104,823	5.67%	\$ 512.83	\$ 110,770	5.49%	\$ 540.99	\$ 116,853	
16"	-	\$ 611.43	\$ -	27.86%	\$ 781.78	\$ -	5.67%	\$ 826.14	\$ -	5.49%	\$ 871.50	\$ -	
Total		\$ 3,028,110	\$ 3,028,110	32.00%		\$ 3,997,235	5.67%		\$ 4,224,035	5.49%		\$ 4,455,984	
Hydrants (Excluding Providence)	3,318	\$ 454.02	\$ 1,506,438	32.00%	\$ 599.31	\$ 1,988,511	5.67%	\$ 633.31	\$ 2,101,337	5.49%	\$ 668.09	\$ 2,216,725	
Total Fire Protection Charge Revenue			\$4,534,548.24			\$5,985,745.26			\$6,325,372.51			\$6,672,708.72	
Total Rate Revenues			\$ 71,256,053			\$ 83,835,770			\$ 88,302,758			\$ 92,878,001	
Miscellaneous Revenues			\$ 1,493,163			\$ 1,493,163			\$ 1,493,163			\$ 1,493,163	
Total Revenues			\$ 72,749,216	17.29%		\$ 85,328,933	5.24%		\$ 89,795,921	5.10%		\$ 94,371,164	
			-			7,148			7,554			7,968	

EXHIBIT B

Schedule HJS-22: Proposed Rates

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

Description	Existing Rates			Proposed FY 2021				Proposed FY 2022			Proposed FY 2023	
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Wholesale Charges												
Bristol County	1,494,845	\$ 1.350858	\$ 2,019,323	7.69%	\$ 1.454696	\$ 2,174,545	4.19%	\$ 1.515639	\$ 2,265,646	4.15%	\$ 1.578486	\$ 2,359,591
East Providence	1,822,773	\$ 1.350858	\$ 2,462,307	19.01%	\$ 1.607621	\$ 2,930,328	4.19%	\$ 1.674971	\$ 3,053,091	4.15%	\$ 1.744424	\$ 3,179,688
Greenville	421,521	\$ 1.350858	\$ 569,415	33.56%	\$ 1.804260	\$ 760,534	4.19%	\$ 1.879848	\$ 792,396	4.15%	\$ 1.957796	\$ 825,253
Kent County	2,727,147	\$ 1.350858	\$ 3,683,989	7.12%	\$ 1.446985	\$ 3,946,141	4.19%	\$ 1.507605	\$ 4,111,462	4.15%	\$ 1.570118	\$ 4,281,944
Lincoln	1,038,229	\$ 1.350858	\$ 1,402,499	25.58%	\$ 1.696440	\$ 1,761,293	4.19%	\$ 1.767511	\$ 1,835,080	4.15%	\$ 1.840801	\$ 1,911,172
Smithfield	391,600	\$ 1.350858	\$ 528,996	37.42%	\$ 1.856386	\$ 726,961	4.19%	\$ 1.934158	\$ 757,417	4.15%	\$ 2.014358	\$ 788,823
Warwick	3,466,644	\$ 1.350858	\$ 4,682,944	47.19%	\$ 1.988310	\$ 6,892,764	4.19%	\$ 2.071609	\$ 7,181,530	4.15%	\$ 2.157508	\$ 7,479,314
Total Wholesale Revenue	11,362,760		15,349,475	25.04%	\$ 1.689076	19,192,565	4.19%	\$ 1.759839	19,996,622	4.15%	\$ 1.832811	20,825,786

Wholesale (per million gallons) 8,499 \$ 1,805.96 \$ 15,349,475 25.04% \$ 2,258.12 \$ 19,192,565 \$ 2,352.73 \$ 19,996,622 \$ 2,450.28 \$ 20,825,786

Description	Existing Rates			Proposed FY 2021				Proposed FY 2022			Proposed FY 2023	
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Private Fire Service Charges												
3/4"	2	\$ 8.64	\$ 207	32.06%	\$ 11.41	\$ 274	5.67%	\$ 12.06	\$ 289	5.49%	\$ 12.72	\$ 305
1"	9	\$ 10.21	\$ 1,103	32.03%	\$ 13.48	\$ 1,456	5.67%	\$ 14.24	\$ 1,538	5.49%	\$ 15.03	\$ 1,623
1-1/2"	2	\$ 12.57	\$ 302	32.06%	\$ 16.60	\$ 398	5.67%	\$ 17.54	\$ 421	5.49%	\$ 18.51	\$ 444
2"	68	\$ 18.64	\$ 15,210	32.03%	\$ 24.61	\$ 20,082	5.67%	\$ 26.01	\$ 21,221	5.49%	\$ 27.43	\$ 22,386
4"	391	\$ 79.67	\$ 373,812	32.01%	\$ 105.17	\$ 493,458	5.67%	\$ 111.14	\$ 521,455	5.49%	\$ 117.24	\$ 550,087
6"	1,245	\$ 129.89	\$ 1,940,557	32.00%	\$ 171.46	\$ 2,561,612	5.67%	\$ 181.19	\$ 2,706,949	5.49%	\$ 191.14	\$ 2,855,584
8"	256	\$ 196.73	\$ 604,355	32.00%	\$ 259.69	\$ 797,768	5.67%	\$ 274.42	\$ 843,030	5.49%	\$ 289.49	\$ 889,320
10"	4	\$ 274.06	\$ 13,155	32.00%	\$ 361.76	\$ 17,364	5.67%	\$ 382.28	\$ 18,350	5.49%	\$ 403.28	\$ 19,357
12"	18	\$ 367.64	\$ 79,410	32.00%	\$ 485.29	\$ 104,823	5.67%	\$ 512.82	\$ 110,770	5.49%	\$ 540.98	\$ 116,852
16"	-	\$ 611.43	\$ -	24.21%	\$ 759.46	\$ -	5.67%	\$ 802.55	\$ -	5.49%	\$ 846.62	\$ -
Total		\$ 3,028,110	\$ 3,028,110	32.00%		\$ 3,997,235	5.67%		\$ 4,224,023	5.49%		\$ 4,455,959

Hydrants (Excluding Providence) 3,318 \$ 454.02 \$ 1,506,438 32.00% \$ 599.31 \$ 1,988,511 5.67% \$ 633.31 \$ 2,101,331 5.49% \$ 668.09 \$ 2,216,713

Total Fire Protection Charge Revenue		\$4,534,548.24			\$5,985,745.26			\$6,325,353.71			\$6,672,671.16
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Total Rate Revenues		\$ 71,256,053			\$ 83,834,741			\$ 88,301,672			\$ 92,876,855
Miscellaneous Revenues		\$ 1,493,163			\$ 1,493,163			\$ 1,493,163			\$ 1,493,163
Total Revenues		\$ 72,749,216	17.29%		\$ 85,327,904	5.24%		\$ 89,794,835	5.10%		\$ 94,370,018
		-			6,120			6,467			6,822

EXHIBIT C

Schedule HJS-13d: T&D Labor Allocation (Factor 13)

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Description	Year	Total	CTA	Retail Only	Total CTA	Total Retail Only	CTA Factor	Retail Only Factor	Common To All			Retail Only					Direct Fire	Check		
									Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection				
Hydrant - Install	2017	\$ 189,318	0.00%	100.00%	\$ -	\$ 189,318	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 189,318	\$ -
Hydrant - Install Custodian	2017	\$ 2,573	0.00%	100.00%	\$ -	\$ 2,573	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,573	\$ -
Hydrant - Maintenance	2017	\$ 2,525	0.00%	100.00%	\$ -	\$ 2,525	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,525	\$ -
Hydrant - Relocate Existing	2017	\$ 2,852	0.00%	100.00%	\$ -	\$ 2,852	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,852	\$ -
Hydrant - Remove	2017	\$ 92,751	0.00%	100.00%	\$ -	\$ 92,751	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 92,751	\$ -
Hydrant - Repair	2017	\$ 135,902	0.00%	100.00%	\$ -	\$ 135,902	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 135,902	\$ -
Service - Curb Box - Adjust to Grade	2017	\$ 18,097	0.00%	100.00%	\$ -	\$ 18,097	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,097	\$ -	\$ -	\$ -	\$ -
Service - Curb Box - Check	2017	\$ 45,865	0.00%	100.00%	\$ -	\$ 45,865	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 45,865	\$ -	\$ -	\$ -	\$ -
Service - Curb Box - Dig Up	2017	\$ 180,976	0.00%	100.00%	\$ -	\$ 180,976	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 180,976	\$ -	\$ -	\$ -	\$ -
Service - Curb Stop - Close	2017	\$ -	0.00%	100.00%	\$ -	\$ -	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Curb Stop - Locate	2017	\$ 1,168	0.00%	100.00%	\$ -	\$ 1,168	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,168	\$ -	\$ -	\$ -	\$ -
Service - Curb Stop - Repair	2017	\$ 12,022	0.00%	100.00%	\$ -	\$ 12,022	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,022	\$ -	\$ -	\$ -	\$ -
Service - Dig Up For Meter	2017	\$ 3,995	0.00%	100.00%	\$ -	\$ 3,995	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,995	\$ -	\$ -	\$ -	\$ -
Service - Install - IFR	2017	\$ 134,678	0.00%	100.00%	\$ -	\$ 134,678	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 134,678	\$ -	\$ -	\$ -	\$ -
Service - Install - T&D	2017	\$ 281,647	0.00%	100.00%	\$ -	\$ 281,647	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 281,647	\$ -	\$ -	\$ -	\$ -
Service - Remove	2017	\$ 153,262	0.00%	100.00%	\$ -	\$ 153,262	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 153,262	\$ -	\$ -	\$ -	\$ -
Service - Repair Leak	2017	\$ 178,649	0.00%	100.00%	\$ -	\$ 178,649	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 178,649	\$ -	\$ -	\$ -	\$ -
TD Misc - Miscellaneous Maint	2017	\$ 3,090	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 16	\$ 13	\$ 21	\$ 315	\$ 241	\$ 397	\$ 1,536	\$ 0	\$ 552	\$ -	\$ -	\$ -
Valve - Adjust Gate Box	2017	\$ 30,476	5.00%	95.00%	\$ 1,524	\$ 28,952	3	6	\$ 503	\$ 386	\$ 634	\$ 9,559	\$ 7,340	\$ 12,053	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Valve - Check / Inspect	2017	\$ 13,317	5.00%	95.00%	\$ 666	\$ 12,651	3	6	\$ 220	\$ 169	\$ 277	\$ 4,177	\$ 3,207	\$ 5,267	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Valve - Install	2017	\$ 89,979	5.00%	95.00%	\$ 4,499	\$ 85,480	3	6	\$ 1,485	\$ 1,141	\$ 1,873	\$ 28,224	\$ 21,671	\$ 35,585	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Valve - Locate	2017	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Valve - Remove	2017	\$ 53,742	5.00%	95.00%	\$ 2,687	\$ 51,055	3	6	\$ 887	\$ 681	\$ 1,119	\$ 16,857	\$ 12,944	\$ 21,254	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Valve - Repair / Repack	2017	\$ 69,879	5.00%	95.00%	\$ 3,494	\$ 66,385	3	6	\$ 1,154	\$ 886	\$ 1,455	\$ 21,919	\$ 16,830	\$ 27,636	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Valve - Replace Box Cover	2017	\$ 3,204	5.00%	95.00%	\$ 160	\$ 3,044	3	6	\$ 53	\$ 41	\$ 67	\$ 1,005	\$ 772	\$ 1,267	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water Main - Install	2017	\$ 4,846	5.00%	95.00%	\$ 242	\$ 4,604	3	6	\$ 80	\$ 61	\$ 101	\$ 1,520	\$ 1,167	\$ 1,917	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water Main - Remove	2017	\$ 1,129	5.00%	95.00%	\$ 56	\$ 1,072	3	6	\$ 19	\$ 14	\$ 23	\$ 354	\$ 272	\$ 446	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water Main - Repair Leak	2017	\$ 91,906	5.00%	95.00%	\$ 4,595	\$ 87,310	3	6	\$ 1,517	\$ 1,165	\$ 1,913	\$ 28,828	\$ 22,135	\$ 36,347	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Blowoff - Inspect	2018	\$ 487	5.00%	95.00%	\$ 24	\$ 463	3	6	\$ 8	\$ 6	\$ 10	\$ 153	\$ 117	\$ 193	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Blowoff - Install	2018	\$ 7,488	5.00%	95.00%	\$ 374	\$ 7,114	3	6	\$ 124	\$ 95	\$ 156	\$ 2,349	\$ 1,804	\$ 2,961	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Blowoff - Locate	2018	\$ 487	5.00%	95.00%	\$ 24	\$ 463	3	6	\$ 8	\$ 6	\$ 10	\$ 153	\$ 117	\$ 193	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Blowoff - Remove	2018	\$ 2,048	5.00%	95.00%	\$ 102	\$ 1,946	3	6	\$ 34	\$ 26	\$ 43	\$ 642	\$ 493	\$ 810	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Blowoff - Repair	2018	\$ 9,260	5.00%	95.00%	\$ 463	\$ 8,797	3	6	\$ 153	\$ 117	\$ 193	\$ 2,904	\$ 2,230	\$ 3,662	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Hydrant - Check / Inspect	2018	\$ 15,350	0.00%	100.00%	\$ -	\$ 15,350	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,350	\$ -	
Hydrant - Close	2018	\$ 902	0.00%	100.00%	\$ -	\$ 902	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 902	\$ -	
Hydrant - Flush	2018	\$ 406	0.00%	100.00%	\$ -	\$ 406	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 406	\$ -	
Hydrant - Install	2018	\$ 162,309	0.00%	100.00%	\$ -	\$ 162,309	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 162,309	\$ -	
Hydrant - Install Custodian	2018	\$ 2,301	0.00%	100.00%	\$ -	\$ 2,301	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,301	\$ -	
Hydrant - Maintenance	2018	\$ 1,980	0.00%	100.00%	\$ -	\$ 1,980	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,980	\$ -	
Hydrant - Open	2018	\$ 51	0.00%	100.00%	\$ -	\$ 51	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 51	\$ -	
Hydrant - Relocate Existing	2018	\$ -	0.00%	100.00%	\$ -	\$ -	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Hydrant - Remove	2018	\$ 63,775	0.00%	100.00%	\$ -	\$ 63,775	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 63,775	\$ -	
Hydrant - Repair	2018	\$ 130,599	0.00%	100.00%	\$ -	\$ 130,599	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 130,599	\$ -	
Hydrant - Repair/Repack Valve	2018	\$ 11,909	0.00%	100.00%	\$ -	\$ 11,909	N/A	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,909	\$ -	
Service - Curb Box - Adjust to Grade	2018	\$ 23,247	0.00%	100.00%	\$ -	\$ 23,247	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 23,247	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Curb Box - Check	2018	\$ 46,892	0.00%	100.00%	\$ -	\$ 46,892	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 46,892	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Curb Box - Dig Up	2018	\$ 179,792	0.00%	100.00%	\$ -	\$ 179,792	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 179,792	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Curb Stop - Close	2018	\$ 19,119	0.00%	100.00%	\$ -	\$ 19,119	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,119	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Curb Stop - Locate	2018	\$ 4,695	0.00%	100.00%	\$ -	\$ 4,695	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,695	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Curb Stop - Open	2018	\$ 23,311	0.00%	100.00%	\$ -	\$ 23,311	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 23,311	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Curb Stop - Repair	2018	\$ 10,965	0.00%	100.00%	\$ -	\$ 10,965	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,965	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Curb Stop - Replace	2018	\$ 6,194	0.00%	100.00%	\$ -	\$ 6,194	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,194	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Dig Up For Meter	2018	\$ -	0.00%	100.00%	\$ -	\$ -	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Install - IFR	2018	\$ 64,995	0.00%	100.00%	\$ -	\$ 64,995	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 64,995	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Install - T&D	2018	\$ 294,119	0.00%	100.00%	\$ -	\$ 294,119	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 294,119	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Meter - Bypass Meter	2018	\$ 205	0.00%	100.00%	\$ -	\$ 205	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 205	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Remove	2018	\$ 100,614	0.00%	100.00%	\$ -	\$ 100,614	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,614	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Remove Lead - CS Apps	2018	\$ 6,492	0.00%	100.00%	\$ -	\$ 6,492	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,492	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Remove Lead - TD	2018	\$ 25,454	0.00%	100.00%	\$ -	\$ 25,454	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,454	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Repair Leak	2018	\$ 169,990	0.00%	100.00%	\$ -	\$ 169,990	N/A	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 169,990	\$ -	\$ -	\$ -	\$ -	\$ -
TD Misc - Miscellaneous Maint	2018	\$ 6,000	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 32	\$ 25	\$ 40	\$ 611	\$ 469	\$ 770	\$ 2,981	\$ 0	\$ 1,072	\$ -	\$ -	\$ -
TD Misc - Pre-Mark for Digup	2018	\$ 335	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 2	\$ 1	\$ 2	\$ 34	\$ 26	\$ 43	\$ 167	\$ 0	\$ 60	\$ -	\$ -	\$ -
TD Misc - Pre-Mark for Saw Cut	2018	\$ 1,024	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 5	\$ 4	\$ 7	\$ 104	\$ 80	\$ 131	\$ 509	\$ 0	\$ 183	\$ -	\$ -	\$ -

Schedule HJS-13d: T&D Labor Allocation (Factor 13)

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Description	Year	Total	CTA	Retail Only	Total CTA	Total Retail Only	CTA Factor	Retail Only Factor	Common To All			Retail Only					Check	
									Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection		Direct Fire
TD Misc - Trench Repair	2018	\$ 393	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 2	\$ 2	\$ 3	\$ 40	\$ 31	\$ 50	\$ 195	\$ 0	\$ 70	\$ -
Trench - Check For Failure	2018	\$ 100	5.00%	95.00%	\$ 5	\$ 95	3	6	\$ 2	\$ 1	\$ 2	\$ 31	\$ 24	\$ 40	\$ -	\$ -	\$ -	\$ -
Trench Restoration	2018	\$257,373	5.00%	95.00%	\$ 12,869	\$ 244,504	3	6	\$ 4,249	\$ 3,262	\$ 5,357	\$ 80,731	\$ 61,987	\$ 101,786	\$ -	\$ -	\$ -	\$ -
Valve - Adjust Gate Box	2018	\$ 30,505	5.00%	95.00%	\$ 1,525	\$ 28,980	3	6	\$ 504	\$ 387	\$ 635	\$ 9,569	\$ 7,347	\$ 12,064	\$ -	\$ -	\$ -	\$ -
Valve - Check / Inspect	2018	\$ 8,958	5.00%	95.00%	\$ 448	\$ 8,510	3	6	\$ 148	\$ 114	\$ 186	\$ 2,810	\$ 2,157	\$ 3,543	\$ -	\$ -	\$ -	\$ -
Valve - Install	2018	\$ 75,028	5.00%	95.00%	\$ 3,751	\$ 71,277	3	6	\$ 1,239	\$ 951	\$ 1,562	\$ 23,534	\$ 18,070	\$ 29,672	\$ -	\$ -	\$ -	\$ -
Valve - Locate	2018	\$ 2,206	5.00%	95.00%	\$ 110	\$ 2,096	3	6	\$ 36	\$ 28	\$ 46	\$ 692	\$ 531	\$ 873	\$ -	\$ -	\$ -	\$ -
Valve - Raise Gate Box To Grade	2018	\$ 489	5.00%	95.00%	\$ 24	\$ 464	3	6	\$ 8	\$ 6	\$ 10	\$ 153	\$ 118	\$ 193	\$ -	\$ -	\$ -	\$ -
Valve - Remove	2018	\$ 41,701	5.00%	95.00%	\$ 2,085	\$ 39,616	3	6	\$ 688	\$ 529	\$ 868	\$ 13,080	\$ 10,043	\$ 16,492	\$ -	\$ -	\$ -	\$ -
Valve - Repair / Repack	2018	\$ 51,060	5.00%	95.00%	\$ 2,553	\$ 48,507	3	6	\$ 843	\$ 647	\$ 1,063	\$ 16,016	\$ 12,298	\$ 20,193	\$ -	\$ -	\$ -	\$ -
Valve - Replace Box Cover	2018	\$ 1,122	5.00%	95.00%	\$ 56	\$ 1,066	3	6	\$ 19	\$ 14	\$ 23	\$ 352	\$ 270	\$ 444	\$ -	\$ -	\$ -	\$ -
Water Main - Install	2018	\$ 9,226	5.00%	95.00%	\$ 461	\$ 8,765	3	6	\$ 152	\$ 117	\$ 192	\$ 2,894	\$ 2,222	\$ 3,649	\$ -	\$ -	\$ -	\$ -
Water Main - Remove	2018	\$ 6,846	5.00%	95.00%	\$ 342	\$ 6,504	3	6	\$ 113	\$ 87	\$ 142	\$ 2,147	\$ 1,649	\$ 2,707	\$ -	\$ -	\$ -	\$ -
Water Main - Repair Leak	2018	\$137,742	5.00%	95.00%	\$ 6,887	\$ 130,855	3	6	\$ 2,274	\$ 1,746	\$ 2,867	\$ 43,206	\$ 33,175	\$ 54,474	\$ -	\$ -	\$ -	\$ -
DigSafe - Pre-Mark	2018	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Leak Detection	2018	\$ 642	5.00%	95.00%	\$ 32	\$ 609	3	6	\$ 11	\$ 8	\$ 13	\$ 201	\$ 155	\$ 254	\$ -	\$ -	\$ -	\$ -
Miscellaneous Work	2018	\$ -	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Report Leak	2018	\$ 3,424	5.00%	95.00%	\$ 171	\$ 3,253	3	6	\$ 57	\$ 43	\$ 71	\$ 1,074	\$ 825	\$ 1,354	\$ -	\$ -	\$ -	\$ -
Shut Down Not	2018	\$ 299	0.00%	100.00%	\$ -	\$ 299	n/a	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 299	\$ -
TD Collect Sample	2018	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Trench - Check	2018	\$ 4,632	5.00%	95.00%	\$ 232	\$ 4,400	3	6	\$ 76	\$ 59	\$ 96	\$ 1,453	\$ 1,116	\$ 1,832	\$ -	\$ -	\$ -	\$ -
Water Pressure	2018	\$ 25	5.00%	95.00%	\$ 1	\$ 24	3	6	\$ 0	\$ 0	\$ 1	\$ 8	\$ 6	\$ 10	\$ -	\$ -	\$ -	\$ -
Water Quality Issue	2018	\$ 95	5.00%	95.00%	\$ 5	\$ 90	3	6	\$ 2	\$ 1	\$ 2	\$ 30	\$ 23	\$ 37	\$ -	\$ -	\$ -	\$ -
DigSafe - Blasting	2018	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
DigSafe - Emergency	2018	\$ 1,162	5.00%	95.00%	\$ 58	\$ 1,104	3	6	\$ 19	\$ 15	\$ 24	\$ 365	\$ 280	\$ 460	\$ -	\$ -	\$ -	\$ -
DigSafe - Freeform	2018	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
DigSafe - Regular	2018	\$ 2,849	5.00%	95.00%	\$ 142	\$ 2,707	3	6	\$ 47	\$ 36	\$ 59	\$ 894	\$ 686	\$ 1,127	\$ -	\$ -	\$ -	\$ -
DigSafe - Violation	2018	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Blowoff - Inspect	2019	\$ 79	5.00%	95.00%	\$ 4	\$ 75	3	6	\$ 1	\$ 1	\$ 2	\$ 25	\$ 19	\$ 31	\$ -	\$ -	\$ -	\$ -
Blowoff - Install	2019	\$ 15,186	5.00%	95.00%	\$ 759	\$ 14,426	3	6	\$ 251	\$ 192	\$ 316	\$ 4,763	\$ 3,657	\$ 6,006	\$ -	\$ -	\$ -	\$ -
Blowoff - Locate	2019	\$ 79	5.00%	95.00%	\$ 4	\$ 75	3	6	\$ 1	\$ 1	\$ 2	\$ 25	\$ 19	\$ 31	\$ -	\$ -	\$ -	\$ -
Blowoff - Remove	2019	\$ 6,165	5.00%	95.00%	\$ 308	\$ 5,857	3	6	\$ 102	\$ 78	\$ 128	\$ 1,934	\$ 1,485	\$ 2,438	\$ -	\$ -	\$ -	\$ -
Blowoff - Repair	2019	\$ 7,612	5.00%	95.00%	\$ 381	\$ 7,231	3	6	\$ 126	\$ 96	\$ 158	\$ 2,388	\$ 1,833	\$ 3,010	\$ -	\$ -	\$ -	\$ -
Hydrant - Check / Inspect	2019	\$ 18,086	0.00%	100.00%	\$ -	\$ 18,086	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,086
Hydrant - Close	2019	\$ 3,592	0.00%	100.00%	\$ -	\$ 3,592	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,592
Hydrant - Flush	2019	\$ 75	0.00%	100.00%	\$ -	\$ 75	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75
Hydrant - Gate Box Adjust / Replace	2019	\$ 1,943	0.00%	100.00%	\$ -	\$ 1,943	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,943
Hydrant - Install	2019	\$104,475	0.00%	100.00%	\$ -	\$ 104,475	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 104,475
Hydrant - Install - TD	2019	\$ 18,592	0.00%	100.00%	\$ -	\$ 18,592	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,592
Hydrant - Install Custodian	2019	\$ 1,748	0.00%	100.00%	\$ -	\$ 1,748	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,748
Hydrant - Maintenance	2019	\$ 3,485	0.00%	100.00%	\$ -	\$ 3,485	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,485
Hydrant - Open	2019	\$ 113	0.00%	100.00%	\$ -	\$ 113	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113
Hydrant - Relocate Existing	2019	\$ -	0.00%	100.00%	\$ -	\$ -	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Hydrant - Remove	2019	\$ 34,757	0.00%	100.00%	\$ -	\$ 34,757	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,757
Hydrant - Remove - TD	2019	\$ 4,678	0.00%	100.00%	\$ -	\$ 4,678	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,678
Hydrant - Repair	2019	\$ 94,220	0.00%	100.00%	\$ -	\$ 94,220	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 94,220
Hydrant - Repair/Repack Valve	2019	\$ 10,469	0.00%	100.00%	\$ -	\$ 10,469	n/a	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,469
Sampling Station - Install	2019	\$ 6,817	0.00%	100.00%	\$ -	\$ 6,817	n/a	6	\$ -	\$ -	\$ -	\$ 2,251	\$ 1,728	\$ 2,838	\$ -	\$ -	\$ -	\$ -
Sampling Station - Remove	2019	\$ 1,330	0.00%	100.00%	\$ -	\$ 1,330	n/a	6	\$ -	\$ -	\$ -	\$ 439	\$ 337	\$ 554	\$ -	\$ -	\$ -	\$ -
Service - Curb Box - Adjust to Grade	2019	\$ 18,893	0.00%	100.00%	\$ -	\$ 18,893	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,893	\$ -	\$ -	\$ -
Service - Curb Box - Check	2019	\$ 37,952	0.00%	100.00%	\$ -	\$ 37,952	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 37,952	\$ -	\$ -	\$ -
Service - Curb Box - Dig Up	2019	\$122,415	0.00%	100.00%	\$ -	\$ 122,415	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,415	\$ -	\$ -	\$ -
Service - Curb Stop - Close	2019	\$ 47,417	0.00%	100.00%	\$ -	\$ 47,417	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 47,417	\$ -	\$ -	\$ -
Service - Curb Stop - Locate	2019	\$ 13,968	0.00%	100.00%	\$ -	\$ 13,968	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 13,968	\$ -	\$ -	\$ -
Service - Curb Stop - Open	2019	\$ 56,932	0.00%	100.00%	\$ -	\$ 56,932	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 56,932	\$ -	\$ -	\$ -
Service - Curb Stop - Repair	2019	\$ -	0.00%	100.00%	\$ -	\$ -	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Curb Stop - Replace	2019	\$ -	0.00%	100.00%	\$ -	\$ -	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Curb Stop - Replace / Repair	2019	\$ 25,813	0.00%	100.00%	\$ -	\$ 25,813	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,813	\$ -	\$ -	\$ -
Service - Dig Up For Meter	2019	\$ -	0.00%	100.00%	\$ -	\$ -	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Field Asset Measurement	2019	\$ 10,028	0.00%	100.00%	\$ -	\$ 10,028	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,028	\$ -	\$ -	\$ -
Service - Install - IFR	2019	\$ -	0.00%	100.00%	\$ -	\$ -	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Install - T&D	2019	\$ 473,668	0.00%	100.00%	\$ -	\$ 473,668	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 473,668	\$ -	\$ -	\$ -
Service - Meter - Bypass Meter	2019	\$ 1,554	0.00%	100.00%	\$ -	\$ 1,554	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,554	\$ -	\$ -	\$ -
Service - MLOG Leak Investigation	2019	\$ 276	0.00%	100.00%	\$ -	\$ 276	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 276	\$ -	\$ -	\$ -

Schedule HJS-13d: T&D Labor Allocation (Factor 13)

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AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Description	Year	Total	CTA	Retail Only	Total CTA	Total Retail Only	CTA Factor	Retail Only Factor	Common To All			Retail Only					Check		
									Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection		Direct Fire	
Service - Reconnect	2019	\$ 2,096	0.00%	100.00%	\$ -	\$ 2,096	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,096	\$ -	\$ -	\$ -
Service - Remove	2019	\$ 42,450	0.00%	100.00%	\$ -	\$ 42,450	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,450	\$ -	\$ -	\$ -
Service - Remove Lead - CS Apps	2019	\$ -	0.00%	100.00%	\$ -	\$ -	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Service - Remove Lead - TD	2019	\$ 116,483	0.00%	100.00%	\$ -	\$ 116,483	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,483	\$ -	\$ -	\$ -
Service - Repair Leak	2019	\$ 136,350	0.00%	100.00%	\$ -	\$ 136,350	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,350	\$ -	\$ -	\$ -
TD Misc - Miscellaneous Maint	2019	\$ 226	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 1	\$ 1	\$ 2	\$ 23	\$ 18	\$ 29	\$ 113	\$ 0	\$ 40	\$ -	
TD Misc - Pre-Mark for Digup	2019	\$ -	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
TD Misc - Pre-Mark for Saw Cut	2019	\$ -	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
TD Misc - Trench Repair	2019	\$ 17,844	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 95	\$ 73	\$ 120	\$ 1,816	\$ 1,394	\$ 2,290	\$ 8,867	\$ 1	\$ 3,187	\$ -	
Trench - Check For Failure	2019	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Trench Restoration	2019	\$ 747,233	5.00%	95.00%	\$ 37,362	\$ 709,871	3	6	\$ 12,336	\$ 9,472	\$ 15,553	\$ 234,386	\$ 179,969	\$ 295,516	\$ -	\$ -	\$ -	\$ -	
Valve - Adjust Gate Box	2019	\$ 5,989	5.00%	95.00%	\$ 299	\$ 5,690	3	6	\$ 99	\$ 76	\$ 125	\$ 1,879	\$ 1,442	\$ 2,369	\$ -	\$ -	\$ -	\$ -	
Valve - Check / Inspect	2019	\$ 5,836	5.00%	95.00%	\$ 292	\$ 5,544	3	6	\$ 96	\$ 74	\$ 121	\$ 1,830	\$ 1,405	\$ 2,308	\$ -	\$ -	\$ -	\$ -	
Valve - Install	2019	\$ 17,734	5.00%	95.00%	\$ 887	\$ 16,847	3	6	\$ 293	\$ 225	\$ 369	\$ 5,563	\$ 4,271	\$ 7,013	\$ -	\$ -	\$ -	\$ -	
Valve - Install - TD	2019	\$ 13,701	5.00%	95.00%	\$ 685	\$ 13,016	3	6	\$ 226	\$ 174	\$ 285	\$ 4,297	\$ 3,300	\$ 5,418	\$ -	\$ -	\$ -	\$ -	
Valve - Locate	2019	\$ 741	5.00%	95.00%	\$ 37	\$ 704	3	6	\$ 12	\$ 9	\$ 15	\$ 233	\$ 179	\$ 293	\$ -	\$ -	\$ -	\$ -	
Valve - Raise Gate Box To Grade	2019	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Valve - Remove	2019	\$ 6,774	5.00%	95.00%	\$ 339	\$ 6,435	3	6	\$ 112	\$ 86	\$ 141	\$ 2,125	\$ 1,631	\$ 2,679	\$ -	\$ -	\$ -	\$ -	
Valve - Remove - TD	2019	\$ 755	5.00%	95.00%	\$ 38	\$ 718	3	6	\$ 12	\$ 10	\$ 16	\$ 237	\$ 182	\$ 299	\$ -	\$ -	\$ -	\$ -	
Valve - Repair / Repack	2019	\$ 28,008	5.00%	95.00%	\$ 1,400	\$ 26,608	3	6	\$ 462	\$ 355	\$ 583	\$ 8,785	\$ 6,746	\$ 11,077	\$ -	\$ -	\$ -	\$ -	
Valve - Replace Box Cover	2019	\$ 2,329	5.00%	95.00%	\$ 116	\$ 2,212	3	6	\$ 38	\$ 30	\$ 48	\$ 730	\$ 561	\$ 921	\$ -	\$ -	\$ -	\$ -	
Water Main - Install	2019	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Water Main - Remove	2019	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Water Main - Repair Leak	2019	\$ 115,527	5.00%	95.00%	\$ 5,776	\$ 109,750	3	6	\$ 1,907	\$ 1,464	\$ 2,405	\$ 36,238	\$ 27,824	\$ 45,689	\$ -	\$ -	\$ -	\$ -	
DigSafe - Pre-Mark	2019	\$ 398	5.00%	95.00%	\$ 20	\$ 378	3	6	\$ 7	\$ 5	\$ 8	\$ 125	\$ 96	\$ 157	\$ -	\$ -	\$ -	\$ -	
Leak Detection	2019	\$ 477	5.00%	95.00%	\$ 24	\$ 453	3	6	\$ 8	\$ 6	\$ 10	\$ 150	\$ 115	\$ 189	\$ -	\$ -	\$ -	\$ -	
Miscellaneous Work	2019	\$ 2,630	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 14	\$ 11	\$ 18	\$ 268	\$ 206	\$ 337	\$ 1,307	\$ 0	\$ 470	\$ -	
Report Leak	2019	\$ 9,774	5.00%	95.00%	\$ 489	\$ 9,286	3	6	\$ 161	\$ 124	\$ 203	\$ 3,066	\$ 2,354	\$ 3,866	\$ -	\$ -	\$ -	\$ -	
Shut Down Not	2019	\$ 22	0.00%	100.00%	\$ -	\$ 22	n/a	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 22	\$ -	
TD Collect Sample	2019	\$ 142	5.00%	95.00%	\$ 7	\$ 135	3	6	\$ 2	\$ 2	\$ 3	\$ 45	\$ 34	\$ 56	\$ -	\$ -	\$ -	\$ -	
Trench - Check	2019	\$ 5,914	5.00%	95.00%	\$ 296	\$ 5,618	3	6	\$ 98	\$ 75	\$ 123	\$ 1,855	\$ 1,424	\$ 2,339	\$ -	\$ -	\$ -	\$ -	
Water Pressure	2019	\$ 279	5.00%	95.00%	\$ 14	\$ 265	3	6	\$ 5	\$ 4	\$ 6	\$ 87	\$ 67	\$ 110	\$ -	\$ -	\$ -	\$ -	
Water Quality Issue	2019	\$ 47	5.00%	95.00%	\$ 2	\$ 45	3	6	\$ 1	\$ 1	\$ 1	\$ 15	\$ 11	\$ 19	\$ -	\$ -	\$ -	\$ -	
DigSafe - Blasting	2019	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
DigSafe - Emergency	2019	\$ 5,209	5.00%	95.00%	\$ 260	\$ 4,949	3	6	\$ 86	\$ 66	\$ 108	\$ 1,634	\$ 1,255	\$ 2,060	\$ -	\$ -	\$ -	\$ -	
DigSafe - Freeform	2019	\$ 107	5.00%	95.00%	\$ 5	\$ 102	3	6	\$ 2	\$ 1	\$ 2	\$ 34	\$ 26	\$ 42	\$ -	\$ -	\$ -	\$ -	
DigSafe - Regular	2019	\$ 1,128	5.00%	95.00%	\$ 56	\$ 1,071	3	6	\$ 19	\$ 14	\$ 23	\$ 354	\$ 272	\$ 446	\$ -	\$ -	\$ -	\$ -	
DigSafe - Violation	2019	\$ -	5.00%	95.00%	\$ -	\$ -	3	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
3-Year Total (Direct Allocations)									\$6,223,596	\$33,194	\$25,487	\$41,851	\$633,376	\$486,326	\$798,567	\$3,092,737	\$321	\$1,111,735	
Indirect Allocation %									100.00%	0.53%	0.41%	0.67%	10.18%	7.81%	12.83%	49.69%	0.01%	17.86%	
3-Year Total (All Allocations)									\$6,255,138	\$33,362	\$25,617	\$42,063	\$636,586	\$488,790	\$802,614	\$3,108,412	\$323	\$1,117,370	
Factor 13 - As T&D Work/Service Orders									100.00%	0.53%	0.41%	0.67%	10.18%	7.81%	12.83%	49.69%	0.01%	17.86%	
									1.62%				98.38%						
									12.87%				87.13%						

Schedule HJS-13e: T&D Contract Services Allocation (Factor 14)

Providence Water Supply Board
Docket # 4994

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Request for General Rate Relief
Rebuttal Testimony of Harold J. Smith

Test Year Ending June 30, 2019

Rate Years Ending June 30, 2021 through 2023

Description	Year	Total	Common to All		Retail Only		Common to All Factor	Retail Only Factor	Common To All			Retail Only					Check		
			Share	Share	Cost	Cost			Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection		Direct Fire	
Uniforms	2017	\$ 25,500	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 386	\$ 297	\$ 487	\$ 7,343	\$ 5,638	\$ 9,258	\$ 2,091	\$ -	\$ -	\$ -	\$ -
Markouts/Dig Safe	2017	\$ 31,727	5.00%	95.00%	\$ 1,586	\$ 30,141	3	6	\$ 524	\$ 402	\$ 660	\$ 9,952	\$ 7,641	\$ 12,547	\$ -	\$ -	\$ -	\$ -	\$ -
Switchboard Monitoring	2017	\$ 2,929	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 44	\$ 34	\$ 56	\$ 843	\$ 648	\$ 1,063	\$ 240	\$ -	\$ -	\$ -	\$ -
Service Repair	2017	\$ 93,580	0.00%	100.00%	\$ -	\$ 93,580	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 93,580	\$ -	\$ -	\$ -	\$ -
Police Details	2017	\$ 174,132	5.00%	95.00%	\$ 8,707	\$ 165,426	3	6	\$ 2,875	\$ 2,207	\$ 3,625	\$ 54,620	\$ 41,939	\$ 68,866	\$ -	\$ -	\$ -	\$ -	\$ -
T&D Contractor	2017	\$ 47,871	5.00%	95.00%	\$ 2,394	\$ 45,477	3	6	\$ 790	\$ 607	\$ 996	\$ 15,016	\$ 11,530	\$ 18,932	\$ -	\$ -	\$ -	\$ -	\$ -
Repair Leak on Service	2017	\$ 47,130	0.00%	100.00%	\$ -	\$ 47,130	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 47,130	\$ -	\$ -	\$ -	\$ -
Road Restoration - Contractor	2017	\$ 590,536	5.00%	95.00%	\$ 29,527	\$ 561,010	3	6	\$ 9,749	\$ 7,486	\$ 12,292	\$ 185,235	\$ 142,229	\$ 233,546	\$ -	\$ -	\$ -	\$ -	\$ -
Telephone	2017	\$ 8,719	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 132	\$ 101	\$ 167	\$ 2,511	\$ 1,928	\$ 3,165	\$ 715	\$ -	\$ -	\$ -	\$ -
Uniforms	2018	\$ 7,100	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 108	\$ 83	\$ 136	\$ 2,044	\$ 1,570	\$ 2,578	\$ 582	\$ -	\$ -	\$ -	\$ -
Markouts/Dig Safe	2018	\$ 32,903	5.00%	95.00%	\$ 1,645	\$ 31,258	3	6	\$ 543	\$ 417	\$ 685	\$ 10,321	\$ 7,925	\$ 13,013	\$ -	\$ -	\$ -	\$ -	\$ -
Switchboard Monitoring	2018	\$ 3,373	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 51	\$ 39	\$ 64	\$ 971	\$ 746	\$ 1,225	\$ 277	\$ -	\$ -	\$ -	\$ -
Police Details	2018	\$ 124,242	5.00%	95.00%	\$ 6,212	\$ 118,030	3	6	\$ 2,051	\$ 1,575	\$ 2,586	\$ 38,971	\$ 29,923	\$ 49,135	\$ -	\$ -	\$ -	\$ -	\$ -
T&D Contractor	2018	\$ 143,850	5.00%	95.00%	\$ 7,193	\$ 136,658	3	6	\$ 2,375	\$ 1,823	\$ 2,994	\$ 45,122	\$ 34,646	\$ 56,890	\$ -	\$ -	\$ -	\$ -	\$ -
Repair Leak on Service	2018	\$ 44,813	0.00%	100.00%	\$ -	\$ 44,813	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 44,813	\$ -	\$ -	\$ -	\$ -
Road Restoration - Contractor	2018	\$ 538,228	5.00%	95.00%	\$ 26,911	\$ 511,317	3	6	\$ 8,886	\$ 6,823	\$ 11,203	\$ 168,827	\$ 129,631	\$ 212,859	\$ -	\$ -	\$ -	\$ -	\$ -
Telephone	2018	\$ 10,860	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 165	\$ 126	\$ 208	\$ 3,127	\$ 2,401	\$ 3,943	\$ 890	\$ -	\$ -	\$ -	\$ -
Markouts/Dig Safe	2019	\$ 31,113	5.00%	95.00%	\$ 1,556	\$ 29,557	3	6	\$ 514	\$ 394	\$ 648	\$ 9,759	\$ 7,493	\$ 12,304	\$ -	\$ -	\$ -	\$ -	\$ -
Switchboard Monitoring	2019	\$ 3,000	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 45	\$ 35	\$ 57	\$ 864	\$ 663	\$ 1,089	\$ 246	\$ -	\$ -	\$ -	\$ -
Police Details	2019	\$ 150,299	5.00%	95.00%	\$ 7,515	\$ 142,784	3	6	\$ 2,481	\$ 1,905	\$ 3,128	\$ 47,145	\$ 36,199	\$ 59,440	\$ -	\$ -	\$ -	\$ -	\$ -
T&D Contractor	2019	\$ 120,574	5.00%	95.00%	\$ 6,029	\$ 114,545	3	6	\$ 1,991	\$ 1,528	\$ 2,510	\$ 37,821	\$ 29,040	\$ 47,685	\$ -	\$ -	\$ -	\$ -	\$ -
Repair Leak on Service	2019	\$ 47,278	0.00%	100.00%	\$ -	\$ 47,278	n/a	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 47,278	\$ -	\$ -	\$ -	\$ -
Road Restoration - Contractor	2019	\$ 620,956	5.00%	95.00%	\$ 31,048	\$ 589,908	3	6	\$ 10,251	\$ 7,871	\$ 12,925	\$ 194,777	\$ 149,555	\$ 245,576	\$ -	\$ -	\$ -	\$ -	\$ -
Misc. Expenses	2019	\$ 9,767	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	\$ 148	\$ 114	\$ 187	\$ 2,812	\$ 2,159	\$ 3,546	\$ 801	\$ -	\$ -	\$ -	\$ -
3-Year Total (Direct Allocations)								\$2,839,230	\$43,030	\$33,040	\$54,252	\$817,565	\$627,751	\$1,030,793	\$232,800	\$0	\$0		
Indirect Allocation %								100.00%	1.52%	1.16%	1.91%	28.80%	22.11%	36.31%	8.20%	0.00%	0.00%		
3-Year Total								\$2,910,479	\$ 44,110	\$ 33,869	\$ 55,614	\$ 838,081	\$ 643,504	\$ 1,056,660	\$ 238,642	\$ -	\$ -		
Factor 14 - As T&D Contract Services								100.00%	1.52%	1.16%	1.91%	28.80%	22.11%	36.31%	8.20%	0.00%	0.00%		

Schedule HJS-13g: Central Operations Facility Square Footage for Allocation of COF Net Plant In Service (Factor 22)

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Description	Total Square Feet	Common to All Share	Retail Only Share	Common to All Sq. Feet	Retail Only Sq. Feet	Common to All Factor	Retail Only Factor	Common To All			Retail Only					Check		
								Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection		Direct Fire	
1ST FLOOR / COMMON SPACE / Area 516 SF	516	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	66	32	18	67	40	65	152	48	29	\$ -	
1ST FLOOR / COMMON SPACE / Area 731 SF	731	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	93	45	25	95	56	92	215	68	41	\$ -	
1ST FLOOR / COMMON SPACE / Area 1637 SF	1,637	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	209	100	56	213	126	206	481	153	93	\$ -	
1ST FLOOR / COMMON SPACE / Area 10280 SF	10,280	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	1,314	628	353	1,339	788	1,294	3,020	961	582	\$ -	
1ST FLOOR / MUSEUM / Area 1632 SF	1,632	0.00%	100.00%	0	1,632	N/A	4	-	-	-	1,624	-	-	-	-	8	\$ -	
1ST FLOOR / AUTOMOTIVE / Area 7680 SF	7,680	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	982	469	263	1,000	589	967	2,256	718	435	\$ -	
1ST FLOOR / BOARD ROOM / Area 1041 SF	1,041	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	133	64	36	136	80	131	306	97	59	\$ -	
1ST FLOOR / COMMERCIAL SERVICES / Area 9989 SF	9,989	0.00%	100.00%	0	9,989	N/A	9	-	-	-	-	-	-	4,995	4,995	-	\$ -	
1ST FLOOR / ENGINEERING / Area 16804 SF	16,804	100.00%	100.00%	16,804	16,804	21	21	4,672	2,247	158	1,956	1,502	2,466	3,412	-	391	\$ -	
1ST FLOOR / FINANCE / Area 7232 SF	7,232	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	925	442	248	942	555	911	2,125	676	409	\$ -	
1ST FLOOR / IT/ Area 6771 SF	6,771	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	866	414	232	882	519	853	1,989	633	383	\$ -	
1ST FLOOR / SECURITY / Area 5731 SF	5,731	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	733	350	197	746	439	722	1,684	536	324	\$ -	
1ST FLOOR / T&D / Area 14683 SF	14,683	100.00%	100.00%	14,683	14,683	13	13	78	60	99	1,494	1,147	1,884	7,297	1	2,623	\$ -	
1ST FLOOR / CENTRAL RECORDS / Area 5731 SF	5,731	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	733	350	197	746	439	722	1,684	536	324	\$ -	
1ST FLOOR / PARKING GARAGE / Area 43924 SF	43,924	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	5,616	2,685	1,507	5,721	3,368	5,531	12,905	4,105	2,487	\$ -	
1ST FLOOR / WAREHOUSE & STORAGE/ Area 1177 SF	1,177	39.84%	60.16%	469	708	3	6	155	119	195	234	180	295	-	-	-	\$ -	
1ST FLOOR / WAREHOUSE & STORAGE / Area 2777 SF	2,777	39.84%	60.16%	1,106	1,671	3	6	365	281	461	552	424	695	-	-	-	\$ -	
1ST FLOOR / WAREHOUSE & STORAGE / Area 5550 SF	5,550	39.84%	60.16%	2,211	3,339	3	6	730	561	921	1,102	846	1,390	-	-	-	\$ -	
2ND FLOOR - AREA 'H' COMMON SPACE / Area 772 SF	772	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	99	47	26	101	59	97	227	72	44	\$ -	
2ND FLOOR - AREA 'H' COMMON SPACE / Area 3019 SF	3,019	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	386	185	104	393	231	380	887	282	171	\$ -	
2ND FLOOR - AREA 'H' COMMON SPACE / Area 3946 SF	3,946	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	505	241	135	514	303	497	1,159	369	223	\$ -	
2ND FLOOR - AREA 'H' DINING/CAFETERIA / Area 4575 SF	4,575	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	585	280	157	596	351	576	1,344	428	259	\$ -	
2ND FLOOR - AREA 'H' FUTURE SPACE / Area 237 SF	237	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	30	14	8	31	18	30	70	22	13	\$ -	
2ND FLOOR - AREA 'H' FUTURE SPACE / Area 540 SF	540	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	69	33	19	70	41	68	159	50	31	\$ -	
2ND FLOOR - AREA 'H' FUTURE SPACE / Area 981 SF	981	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	125	60	34	128	75	124	288	92	56	\$ -	
2ND FLOOR - GM/EXECUTIVE MANAGEMENT / Area 2491 S	2,491	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	318	152	85	324	191	314	732	233	141	\$ -	
2ND FLOOR - HUMAN RESOURCES (1)/ Area 1169 SF	1,169	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	149	71	40	152	90	147	343	109	66	\$ -	
2ND FLOOR - HUMAN RESOURCES (2) / Area 2632 SF	2,632	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	337	161	90	343	202	331	773	246	149	\$ -	
2ND FLOOR - LABORATORY /Area 837 SF	837	100.00%	100.00%	837	837	1	1	833	-	-	-	-	-	-	-	4	\$ -	
Total (Direct Allocations)								53,449	6,834	3,267	1,833	6,962	4,098	6,730	15,703	4,995	3,026	\$ -
Indirect Allocation %								100.00%	12.79%	6.11%	3.43%	13.02%	7.67%	12.59%	29.38%	9.35%	5.66%	\$ -
Total (Direct Allocations)								165,085	21,107	10,092	5,663	21,502	12,659	20,786	48,501	15,429	9,347	\$ -
Factor 22 - As Central Operations Facility Square Footage								100.00%	12.79%	6.11%	3.43%	13.02%	7.67%	12.59%	29.38%	9.35%	5.66%	\$ -

Schedule HJS-15b: Assignment of Non-Revenue Water (NRW)

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Line	Description	Allocation (HCF)
1	Start: Annual Water Production	28,042,451
2	Less: Annual Sales	23,987,787
3	Equals: Non-Revenue Water	4,054,664
4	Less: Non-Billed Water Use	
5	Unauthorized Consumption ⁽¹⁾	70,106
6	Customer Metering Inaccuracy ⁽²⁾	741,890
7	Firefighting Allowance ⁽³⁾	133,690
8	Water Quality and Other Testing ⁽³⁾	1,178,162
9	Main Flushing/System Maintenance ⁽³⁾	66,845
10	Other Authorized Unbilled ⁽³⁾	13,501
	Total Non-Billed Use	2,204,194
11	Equals: Real Losses (Leakage)	1,850,470
12	Leakage on Distribution Mains and Services ⁽⁴⁾	1,650,295
13	Leakage on Transmission Mains ⁽⁴⁾	200,175
14	Retail Transmission Leakage ⁽⁵⁾	105,354
15	Wholesale Transmission Leakage ⁽⁵⁾	94,821
16	Flushing on Distribution Mains and Services ⁽⁴⁾	59,614
17	Flushing on Transmission Mains ⁽⁴⁾	7,231
18	Retail Transmission Flushing	3,806
19	Wholesale Transmission Flushing	3,425
20	Retail Non-Revenue Water	
21	100% of Unauthorized Consumption	70,106
22	100% of Customer Metering Inaccuracy	741,890
23	100% of Firefighting Allowance	133,690
24	100% of Water Quality and Testing	1,178,162
25	100% of Flushing on Distribution Mains	59,614
26	52.6% of Flushing on Transmission Mains	3,806
27	100% of Leakage on Distribution Mains	1,650,295
28	52.6% of Leakage on Transmission Mains	105,354
29	100% of Other Authorized Unbilled	13,501
30	Total Retail NRW	3,956,418
31	%	97.58%
32	Wholesale Non-Revenue Water	
33	0% of Unauthorized Consumption	-
34	0% of Customer Metering Inaccuracy	-
35	0% of Firefighting Allowance	-
36	0% of Water Quality and Testing	0
37	0% of Flushing on Distribution Mains	-
38	47.4% of Flushing on Transmission Mains	3,425
39	0% of Leakage on Distribution Mains	-
40	47.4% of Leakage on Transmission Mains	94,821
41	0% of Other Authorized Unbilled	-
42	Total Wholesale NRW	98,246
43	%	2.42%

0.48%

(1) Estimated at 0.25% of Production
 (2) Estimated at 3%. Calculated as: (Sales / 0.97) - Sales
 (3) Per Providence Water FY 2019
 (4) Based on Length of Pipe
 (5) Based on Pro-Forma Sales

Schedule HJS-16a: Customer Class Units of Service

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

Customer Class	Base Demand			Maximum Day Extra Capacity				Maximum Hour Extra Capacity				Billing		Direct Fire
	Rate Year Sales	Plus NRW	Base	Average Day	Peaking Factor	Maximum Day	Maximum Day Extra	Average Day	Peaking Factor	Maximum Hour	Maximum Hour Extra	Meters & Services	Monthly Bills	
	HCF	HCF	HCF	HCF/d		HCF/d	HCF/d	HCF/d		HCF/d	HCF/d	5/8" Eq.		6" Eq.
Retail														
Residential	8,396,176	2,631,185	11,027,361	23,003	1.56	35,958	12,954	23,003	3.13	71,915	35,958			
Commercial	4,041,665	1,266,573	5,308,238	11,073	1.68	18,644	7,571	11,073	3.37	37,289	18,644			
Industrial	187,186	58,660	245,846	513	1.44	741	228	513	2.89	1,481	741			
Sub-total Retail	12,625,027	3,956,418	16,581,445	34,589	1.60	55,343	20,753	34,589	3.20	110,685	55,343	88,313	931,056	
Fire Protection														
Private						690	690			2,759	2,070	40,187	23,940	
Public (Providence)			69,188			1,085	1,085			4,338	3,254			3,232
Public (All Other)			71,029			1,113	1,113			4,453	3,340			3,318
Subtotal Fire Protection			140,217			2,888	2,888			11,551	8,663	40,187	23,940	6,550
Bristol County	1,494,845	12,925	1,507,770	4,095	1.51	6,191	2,096	4,095	1.81	7,429	1,238			
East Providence	1,822,773	15,760	1,838,533	4,994	1.67	8,317	3,323	4,994	2.76	13,797	5,480			
East Smithfield	-	-	-	-	0.00	-	-	-	0.00	-	-			
Greenville	421,521	3,645	425,166	1,155	2.01	2,323	1,168	1,155	3.05	3,525	1,202			
Johnston	-	-	-	-	0.00	-	-	-	0.00	-	-			
Kent County	2,727,147	23,580	2,750,727	7,472	1.42	10,638	3,166	7,472	2.18	16,260	5,622			
Lincoln	1,038,229	8,977	1,047,205	2,844	1.90	5,402	2,557	2,844	2.23	6,354	952			
Smithfield	391,600	3,386	394,986	1,073	2.17	2,328	1,255	1,073	2.56	2,747	419			
Warwick	3,466,644	29,974	3,496,618	9,498	2.40	22,752	13,254	9,498	2.81	26,693	3,941			
Wholesale	11,362,760	98,246	11,461,006	31,131	1.86	57,951	26,821	31,131	2.47	76,806	18,855			
Grand Total	23,987,787	4,054,664	28,182,668	65,720	1.77	116,182	50,462	65,720	3.03	199,042	82,860	128,499	954,996	6,550

Intraclass Distribution of Retail Max Day Based on Monthly Analysis

	Max Day	%
Residential	36,616	64.97%
Commercial	18,986	33.69%
Industrial	754	1.34%
	56,357	100.00%

Schedule HJS-16c: Customer Class Units of Service

Providence Water Supply Board

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Docket # 4994

Request for General Rate Relief

Rebuttal Testimony of Harold J. Smith

Test Year Ending June 30, 2019

Rate Years Ending June 30, 2021 through 2023

Customer Class	Base	Extra Capacity		Billing		Direct Fire
		Maximum Day Extra	Maximum Hour Extra	Meters & Services	Monthly Bills	
	HCF	HCF/d	HCF/d	5/8" Eq.	Bills	6" Eq.
Retail						
Residential	11,027,361	12,954	35,958			
Commercial	5,308,238	7,571	18,644			
Industrial	245,846	228	741			
Sub-total Retail	16,581,445	20,753	55,343	88,313	931,056	
Fire Protection						
Private		690	2,070	40,187	23,940	
Public (Providence)	69,188	1,085	3,254			3,232
Public (All Other)	71,029	1,113	3,340			3,318
Subtotal Fire Protection	140,217	2,888	8,663	40,187	23,940	6,550
Bristol County	1,507,770	2,096	1,238			
East Providence	1,838,533	3,323	5,480			
East Smithfield	-	-	-			
Greenville	425,166	1,168	1,202			
Johnston	-	-	-			
Kent County	2,750,727	3,166	5,622			
Lincoln	1,047,205	2,557	952			
Smithfield	394,986	1,255	419			
Warwick	3,496,618	13,254	3,941			
Wholesale	11,461,006	26,821	18,855			
Wholesale	11,461,006	26,821	18,855			
Grand Total	28,182,668	50,462	82,860	128,499	954,996	6,550
	16,721,662	23,641	64,006	128,499	954,996	6,550

Schedule HJS-17: Unit Cost of Service

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

	Common To All			Retail Only						
	Total	Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection	Direct Fire
	HCF	HCF/d	HCF/d	HCF	HCF/d	HCF/d	Eq. 5/8" Mtrs.	Bills	Eq. 6" Conn.	
Total Units of Service										
Retail	16,581,445	20,753	55,343	16,581,445	20,753	55,343	88,313	931,056	-	
Fire Protection	140,217	2,888	8,663	140,217	2,888	8,663	40,187	23,940	6,550	
Bristol County	1,507,770	2,096	1,238							
East Providence	1,838,533	3,323	5,480							
East Smithfield	-	-	-							
Greenville	425,166	1,168	1,202							
Johnston	-	-	-							
Kent County	2,750,727	3,166	5,622							
Lincoln	1,047,205	2,557	952							
Smithfield	394,986	1,255	419							
Warwick	3,496,618	13,254	3,941							
Wholesale	11,461,006	26,821	18,855							
Total	28,182,668	50,462	82,860	16,721,662	23,641	64,006	128,499	954,996	6,550	
All but Bristol County	26,674,898	48,366	81,623	16,721,662	23,641	64,006	128,499	954,996	6,550	

Unit Cost of Service											
O&M Expense	\$ 36,760,904	\$ 12,332,196	\$ 5,251,204	\$ 366,475	\$ 1,573,841	\$ 1,208,449	\$ 1,984,324	\$ 4,591,136	\$ 7,633,210	\$ 1,820,068	
All but Bristol County	\$ 1,807,873	\$ 159,291	\$ 122,309	\$ 200,836	\$ 170,815	\$ 131,157	\$ 215,365	\$ 596,126	\$ 61	\$ 211,914	
Unit Cost (\$/Unit)	\$ 0.44	\$ 104.06	\$ 4.42	\$ 0.09	\$ 51.12	\$ 31.00	\$ 35.73	\$ 7.99	\$ 277.87		
All but Bristol County	\$ 0.01	\$ 2.53	\$ 2.46	\$ 0.01	\$ 5.55	\$ 3.36	\$ 4.64	\$ 0.00	\$ 32.35		
Capital Expense	\$ 35,067,000	\$ 9,155,914	\$ 4,403,538	\$ 315,738	\$ 3,859,579	\$ 2,959,242	\$ 4,859,200	\$ 7,722,310	\$ 1,017,065	\$ 774,414	
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Unit Cost (\$/Unit)	\$ 0.32	\$ 87.26	\$ 3.81	\$ 0.23	\$ 125.17	\$ 75.92	\$ 60.10	\$ 1.06	\$ 118.23		
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
City Services Expense	\$ 839,167	\$ 233,134	\$ 106,914	\$ 10,297	\$ 41,531	\$ 31,888	\$ 52,361	\$ 137,598	\$ 177,171	\$ 48,273	
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Unit Cost (\$/Unit)	\$ 0.01	\$ 2.12	\$ 0.12	\$ 0.00	\$ 1.35	\$ 0.82	\$ 1.07	\$ 0.19	\$ 7.37		
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Property Tax Expense	\$ 7,629,145	\$ 7,591,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 38,146	
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Unit Cost (\$/Unit)	\$ 0.27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5.82		
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Net Operating Revenue Allowance	\$ 1,642,082	\$ 589,431	\$ 197,679	\$ 17,867	\$ 112,915	\$ 86,615	\$ 142,225	\$ 260,943	\$ 176,550	\$ 57,856	
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Unit Cost (\$/Unit)	\$ 0.02	\$ 3.92	\$ 0.22	\$ 0.01	\$ 3.66	\$ 2.22	\$ 2.03	\$ 0.18	\$ 8.83		
All but Bristol County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Total Cost of Service	\$ 81,938,298	\$ 29,901,675	\$ 9,959,335	\$ 710,378	\$ 5,587,866	\$ 4,286,194	\$ 7,038,109	\$ 12,711,988	\$ 9,003,996	\$ 2,738,757	
All but Bristol County	\$ 1,807,873	\$ 159,291	\$ 122,309	\$ 200,836	\$ 170,815	\$ 131,157	\$ 215,365	\$ 596,126	\$ 61	\$ 211,914	
Unit Cost (\$/Unit)	\$ 1.06	\$ 197.36	\$ 8.57	\$ 0.33	\$ 181.30	\$ 109.96	\$ 98.93	\$ 9.43	\$ 418.13		
All but Bristol County	\$ 0.01	\$ 2.53	\$ 2.46	\$ 0.01	\$ 5.55	\$ 3.36	\$ 4.64	\$ 0.00	\$ 32.35		

Total Pumping Expenses	\$ 151,744	\$ 116,513	\$ 191,320	\$ 26,899	\$ 20,654	\$ 33,915	\$ -	\$ -	\$ -	
13 UDF Allocated on Factor 13 - Salaries, Bene	\$ 1,186,315	\$ 6,327	\$ 4,858	\$ 7,978	\$ 120,731	\$ 92,701	\$ 152,219	\$ 589,524	\$ 61	\$ 211,914
14 UDF Allocated on Factor 14 - Police Details	\$ 80,512	\$ 1,220	\$ 937	\$ 1,538	\$ 23,184	\$ 17,801	\$ 29,230	\$ 6,602	\$ -	\$ -
Total O&M Expense (All but Bristol County)	\$ 159,291	\$ 122,309	\$ 200,836	\$ 170,815	\$ 131,157	\$ 215,365	\$ 596,126	\$ 61	\$ 211,914	

Schedule HJS-18: Customer Class Cost of Service

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Total	Common To All			Retail Only						
	Base	Max Day	Max Hour	Base	Max Day	Max Hour	Meters & Services	Billing & Collection	Direct Fire	
Unit Cost of Service (\$/Unit)	\$1.06	\$197.36	\$8.57	\$0.33	\$181.30	\$109.96	\$98.93	\$9.43	\$418.13	
All but Bristol County	\$ 0.01	\$ 2.53	\$ 2.46	\$ 0.01	\$ 5.55	\$ 3.36	\$ 4.64	\$ 0.00	\$ 32.35	
Retail Service:										
Residential Volume										
Units of Service	11,027,361	12,954	35,958	11,027,361	12,954	35,958	-	-	-	
Cost of Service	\$25,045,129	\$11,765,828	\$2,589,479	\$3,396,746	\$3,797,652	\$2,420,517	\$4,074,907	\$-	\$-	
Commercial Volume										
Units of Service	5,308,238	7,571	18,644	5,308,238	7,571	18,644	-	-	-	
Cost of Service	\$12,738,537	\$5,663,713	\$1,513,451	\$205,717	\$1,828,075	\$1,414,699	\$2,112,882	\$-	\$-	
Industrial Volume Charge										
Units of Service	245,846	228	741	245,846	228	741	-	-	-	
Cost of Service	\$527,188	\$262,310	\$45,538	\$8,172	\$84,666	\$42,567	\$83,935	\$-	\$-	
Meter Service Charge										
Units of Service	-	-	-	-	-	-	88,313	931,056	-	
Cost of Service	\$17,924,498	\$-	\$-	\$-	\$-	\$-	\$9,146,156	\$8,778,342	\$-	
Fire Protection:										
Private Fire Lines										
Units of Service	-	690	2,070	-	690	2,070	40,187	23,940	-	
Cost of Service	\$4,911,824	\$137,893	\$22,834	\$-	\$128,896	\$234,528	\$4,161,958	\$225,715	\$-	
Public Fire (Providence)										
Units of Service	69,188	1,085	3,254	69,188	1,085	3,254	-	-	3,232	
Cost of Service	\$2,377,641	\$73,821	\$216,784	\$35,898	\$23,827	\$202,639	\$368,706	\$-	\$1,455,965	
Public Fire (All Other)										
Units of Service	71,029	1,113	3,340	71,029	1,113	3,340	-	-	3,318	
Cost of Service	\$2,440,908	\$75,786	\$222,553	\$36,854	\$24,461	\$208,031	\$378,517	\$-	\$1,494,706	
East Smithfield Surcharge										
Units of Service	-	-	-	-	-	-	-	-	-	
Cost of Service	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	
Wholesale Service:										
Bristol County	1,507,770	2,096	1,238							
East Providence	1,838,533	3,323	5,480							
East Smithfield	-	-	-							
Greenville	425,166	1,168	1,202							
Johnston	-	-	-							
Kent County	2,750,727	3,166	5,622							
Lincoln	1,047,205	2,557	952							
Smithfield	394,986	1,255	419							
Warwick	3,496,618	13,254	3,941							
Units of Service	11,461,006	26,821	18,855							
Bristol County	\$2,023,998	\$1,599,737	\$413,650	\$10,611						
East Providence	\$2,686,429	\$1,961,654	\$664,316	\$60,460						
East Smithfield	\$-	\$-	\$-	\$-						
Greenville	\$700,409	\$453,638	\$233,506	\$13,265						
Johnston	\$-	\$-	\$-	\$-						
Kent County	\$3,629,890	\$2,934,935	\$632,919	\$62,036						
Lincoln	\$1,639,048	\$1,117,333	\$511,207	\$10,507						
Smithfield	\$676,958	\$421,437	\$250,897	\$4,624						
Warwick	\$6,423,713	\$3,730,775	\$2,649,449	\$43,489						
Cost of Service	\$17,780,445	\$12,219,508	\$5,355,945	\$204,992						
Total Allocated Cost of Service	\$83,746,170	\$30,060,966	\$10,081,644	\$911,213	\$5,758,681	\$4,417,350	\$7,253,473	\$13,308,114	\$9,004,057	\$2,950,671

Schedule HJS-19: Development of Volumetric Rates

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

	Units	Residential	Commercial	Industrial	Bristol County	East Providence	East Smithfield	Greenville	Johnston	Kent County	Lincoln	Smithfield	Warwick	Wholesale
Unit Cost														
CTA Base	\$/HCF	1.07	1.07	1.07	1.06	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
CTA Maximum Day	\$/HCF/d	199.89	199.89	199.89	197.36	199.89	199.89	199.89	199.89	199.89	199.89	199.89	199.89	199.89
CTA Maximum Hour	\$/HCF/d	11.03	11.03	11.03	8.57	11.03	11.03	11.03	11.03	11.03	11.03	11.03	11.03	11.03
Retail Only Base	\$/HCF	0.34	0.34	0.34	0.33	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Retail Only Maximum Day	\$/HCF/d	186.85	186.85	186.85	181.30	186.85	186.85	186.85	186.85	186.85	186.85	186.85	186.85	186.85
Retail Only Maximum Hour	\$/HCF/d	113.33	113.33	113.33	109.96	113.33	113.33	113.33	113.33	113.33	113.33	113.33	113.33	113.33
Units														
Base	HCF	11,027,361	5,308,238	245,846	1,507,770	1,838,533	0	425,166	0	2,750,727	1,047,205	394,986	3,496,618	11,461,006
Maximum Day	HCF/d	12,954	7,571	228	2,096	3,323	0	1,168	0	3,166	2,557	1,255	13,254	26,821
Maximum Hour	HCF/d	35,958	18,644	741	1,238	5,480	0	1,202	0	5,622	952	419	3,941	18,855
Total Cost														
CTA Base		\$ 11,765,828	\$ 5,663,713	\$ 262,310	\$ 1,599,737	\$ 1,961,654	\$ -	\$ 453,638	\$ -	\$ 2,934,935	\$ 1,117,333	\$ 421,437	\$ 3,730,775	\$ 12,219,508
CTA Maximum Day		\$ 2,589,479	\$ 1,513,451	\$ 45,538	\$ 413,650	\$ 664,316	\$ -	\$ 233,506	\$ -	\$ 632,919	\$ 511,207	\$ 250,897	\$ 2,649,449	\$ 5,355,945
CTA Maximum Hour		\$ 396,746	\$ 205,717	\$ 8,172	\$ 10,611	\$ 60,460	\$ -	\$ 13,265	\$ -	\$ 62,036	\$ 10,507	\$ 4,624	\$ 43,489	\$ 204,992
Retail Only Base		\$ 3,797,652	\$ 1,828,075	\$ 84,666	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Only Maximum Day		\$ 2,420,517	\$ 1,414,699	\$ 42,567	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Only Maximum Hour		\$ 4,074,907	\$ 2,112,882	\$ 83,935	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PLUS:														
Retail Service Charge Costs		\$ 5,105,238	\$ 2,596,643	\$ 107,463	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Fire Protection Costs		\$ 316,113	\$ 160,782	\$ 6,654	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Private Fire Line Costs		\$ 597,899	\$ 304,105	\$ 12,585	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Public Fire Costs		\$ 295,748	\$ 150,424	\$ 6,225	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Rate Year Revenue Requirement		\$31,360,127	\$15,950,492	\$ 660,115	\$ 2,023,998	\$ 2,686,429	\$ -	\$ 700,409	\$ -	\$ 3,629,890	\$ 1,639,048	\$ 676,958	\$ 6,423,713	\$ 17,780,445
Rate Year Sales														
Base	HCF	8,396,176	4,041,665	187,186	1,494,845	1,822,773	0	421,521	0	2,727,147	1,038,229	391,600	3,466,644	11,362,760
Volumetric Rate Build-Up														
Base	\$/HCF	\$ 1.853639	\$ 1.853639	\$ 1.853639	\$ 1.070169	\$ 1.076192	\$ -	\$ 1.076192	\$ -	\$ 1.076192	\$ 1.076192	\$ 1.076192	\$ 1.076192	\$ 1.075400
Maximum Day	\$/HCF	\$ 0.596700	\$ 0.724491	\$ 0.470684	\$ 0.276718	\$ 0.364453	\$ -	\$ 0.553961	\$ -	\$ 0.232081	\$ 0.492384	\$ 0.640697	\$ 0.764269	\$ 0.471360
Maximum Hour	\$/HCF	\$ 0.532582	\$ 0.573674	\$ 0.492061	\$ 0.007098	\$ 0.033169	\$ -	\$ 0.031470	\$ -	\$ 0.022748	\$ 0.010120	\$ 0.011807	\$ 0.012545	\$ 0.018041
Service Charge	\$/HCF	\$ 0.608043	\$ 0.642469	\$ 0.574096	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Fire	\$/HCF	\$ 0.037650	\$ 0.039781	\$ 0.035548	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Private Fire	\$/HCF	\$ 0.071211	\$ 0.075243	\$ 0.067235	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Public Fire	\$/HCF	\$ 0.035224	\$ 0.037218	\$ 0.033258	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$/HCF	\$ 3.735049	\$ 3.946515	\$ 3.526521	\$ 1.353985	\$ 1.473815	\$ -	\$ 1.661623	\$ -	\$ 1.331021	\$ 1.578696	\$ 1.728697	\$ 1.853006	\$ 1.564800
Rounded	\$/HCF	\$ 3.736000	\$ 3.947000	\$ 3.527000	\$ 1.353986	\$ 1.473815	\$ -	\$ 1.661624	\$ -	\$ 1.331021	\$ 1.578697	\$ 1.728697	\$ 1.853007	\$ 1.564800
Revenues		\$31,368,114	\$15,952,452	\$ 660,205	\$ 2,023,999	\$ 2,686,430	\$ -	\$ 700,410	\$ -	\$ 3,629,891	\$ 1,639,048	\$ 676,958	\$ 6,423,716	\$ 17,780,452
COS		\$31,360,127	\$15,950,492	\$ 660,115	\$ 2,023,998	\$ 2,686,429	\$ -	\$ 700,409	\$ -	\$ 3,629,890	\$ 1,639,048	\$ 676,958	\$ 6,423,713	\$ 17,780,445
Variance due to Rounding		\$ 7,987	\$ 1,960	\$ 90	\$ 1	\$ 0	\$ -	\$ 0	\$ -	\$ 1	\$ 1	\$ 0	\$ 3	\$ 7

Schedule HJS-22: Proposed Rates

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Providence Water Supply Board
 Docket # 4994
 Request for General Rate Relief
 Rebuttal Testimony of Harold J. Smith
 Test Year Ending June 30, 2019
 Rate Years Ending June 30, 2021 through 2023

Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Service Charges												
5/8"	57,812	\$ 7.56	\$ 5,244,705	32.01%	\$ 9.98	\$ 6,923,565	5.64%	\$ 10.54	\$ 7,314,182	5.46%	\$ 11.12	\$ 7,713,719
3/4"	11,326	\$ 8.05	\$ 1,094,092	32.05%	\$ 10.63	\$ 1,444,745	5.64%	\$ 11.23	\$ 1,526,255	5.46%	\$ 11.84	\$ 1,609,626
1"	5,335	\$ 9.50	\$ 608,190	32.00%	\$ 12.54	\$ 802,811	5.64%	\$ 13.25	\$ 848,104	5.46%	\$ 13.97	\$ 894,432
1.5"	1,547	\$ 11.43	\$ 212,187	32.02%	\$ 15.09	\$ 280,131	5.64%	\$ 15.94	\$ 295,935	5.46%	\$ 16.81	\$ 312,101
2"	1,357	\$ 16.76	\$ 272,920	32.04%	\$ 22.13	\$ 360,365	5.64%	\$ 23.38	\$ 380,696	5.46%	\$ 24.66	\$ 401,492
3"	73	\$ 56.01	\$ 49,065	32.01%	\$ 73.94	\$ 64,771	5.64%	\$ 78.11	\$ 68,426	5.46%	\$ 82.38	\$ 72,163
4"	35	\$ 70.55	\$ 29,631	32.01%	\$ 93.13	\$ 39,115	5.64%	\$ 98.38	\$ 41,321	5.46%	\$ 103.76	\$ 43,579
6"	57	\$ 104.47	\$ 71,457	32.01%	\$ 137.91	\$ 94,330	5.64%	\$ 145.69	\$ 99,652	5.46%	\$ 153.65	\$ 105,096
8"	42	\$ 143.23	\$ 72,188	32.00%	\$ 189.07	\$ 95,291	5.64%	\$ 199.74	\$ 100,667	5.46%	\$ 210.65	\$ 106,166
10"	4	\$ 178.36	\$ 8,561	32.00%	\$ 235.44	\$ 11,301	5.64%	\$ 248.72	\$ 11,939	5.46%	\$ 262.31	\$ 12,591
12"	-	\$ 213.49	\$ -	32.00%	\$ 281.81	\$ -	5.64%	\$ 297.71	\$ -	5.46%	\$ 313.97	\$ -
Total Service Charge	77,588		\$ 7,662,995	32.02%		\$ 10,116,425	5.64%		\$ 10,687,178	5.46%		\$ 11,270,965
						\$ -						
Retail Fire Protection Service Charges (Providence Only)												
5/8"	25,954	\$ 1.38	\$ 429,798	32.61%	\$ 1.83	\$ 569,950	5.64%	\$ 1.93	\$ 602,106	5.46%	\$ 2.04	\$ 634,996
3/4"	4,580	\$ 2.07	\$ 113,767	32.37%	\$ 2.74	\$ 150,590	5.64%	\$ 2.89	\$ 159,086	5.46%	\$ 3.05	\$ 167,777
1"	2,091	\$ 5.15	\$ 129,224	32.04%	\$ 6.80	\$ 170,626	5.64%	\$ 7.18	\$ 180,252	5.46%	\$ 7.58	\$ 190,098
1.5"	902	\$ 13.74	\$ 148,722	32.02%	\$ 18.14	\$ 196,347	5.64%	\$ 19.16	\$ 207,425	5.46%	\$ 20.21	\$ 218,756
2"	792	\$ 32.96	\$ 313,252	32.01%	\$ 43.51	\$ 413,519	5.64%	\$ 45.96	\$ 436,849	5.46%	\$ 48.48	\$ 460,712
3"	55	\$ 89.26	\$ 58,912	32.01%	\$ 117.83	\$ 77,768	5.64%	\$ 124.48	\$ 82,155	5.46%	\$ 131.28	\$ 86,643
4"	20	\$ 151.05	\$ 36,252	32.00%	\$ 199.39	\$ 47,854	5.64%	\$ 210.64	\$ 50,553	5.46%	\$ 222.15	\$ 53,315
6"	28	\$ 308.97	\$ 103,814	32.00%	\$ 407.85	\$ 137,038	5.64%	\$ 430.86	\$ 144,769	5.46%	\$ 454.40	\$ 152,677
8"	15	\$ 466.89	\$ 84,040	32.00%	\$ 616.30	\$ 110,934	5.64%	\$ 651.07	\$ 117,193	5.46%	\$ 686.64	\$ 123,594
10"	2	\$ 714.07	\$ 17,138	32.00%	\$ 942.58	\$ 22,622	5.64%	\$ 995.76	\$ 23,898	5.46%	\$ 1,050.15	\$ 25,204
12"	-	\$ 1,180.95	\$ -	32.00%	\$ 1,558.85	\$ -	5.64%	\$ 1,646.80	\$ -	5.46%	\$ 1,736.75	\$ -
Total Retail FPSC (Providence Only)	34,439		\$ 1,434,918	32.22%		\$ 1,897,247	5.64%		\$ 2,004,287	5.46%		\$ 2,113,771
Total Retail Service Charge Revenue			\$ 9,097,913	32.05%		\$ 12,013,672	5.64%		\$ 12,691,465	5.46%		\$ 13,384,736

Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Retail Consumption Charges												
Residential	8,396,176	\$ 3.403	\$ 28,572,187	9.79%	\$ 3.736	\$ 31,368,114	5.64%	\$ 3.947	\$ 33,137,855	5.46%	\$ 4.162	\$ 34,948,009
Commercial	4,041,665	\$ 3.223	\$ 13,026,286	22.46%	\$ 3.947	\$ 15,952,452	5.64%	\$ 4.170	\$ 16,852,465	5.46%	\$ 4.397	\$ 17,773,030
Industrial	187,186	\$ 3.169	\$ 593,192	11.30%	\$ 3.527	\$ 660,205	5.64%	\$ 3.726	\$ 697,453	5.46%	\$ 3.930	\$ 735,551
Total Retail Consumption Charge	12,625,027		\$ 42,191,666	13.72%		\$ 47,980,770	5.64%		\$ 50,687,773	5.46%		\$ 53,456,590
East Smithfield Debt Surcharge	235,576	\$ 0.35	\$ 82,451	0.00%	\$ 0.350	\$ 82,451	0.00%	\$ 0.350	\$ 82,451	0.00%	\$ 0.350	\$ 82,451
Total Retail Volume Charge Revenue			\$ 42,274,117	13.69%		\$ 48,063,222	5.63%		\$ 50,770,224	5.45%		\$ 53,539,041
Total Retail Revenue			\$ 51,372,030	16.94%		\$ 60,076,894	5.63%		\$ 63,461,689	5.46%		\$ 66,923,777

Schedule HJS-22: Proposed Rates

AMENDED BY MICHAEL R. MAKER, SURREBUTTAL

Providence Water Supply Board
 Docket # 4994
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Wholesale Charges												
Bristol County	1,494,845	\$ 1.350858	\$ 2,019,323	0.23%	\$ 1.353986	\$ 2,023,999	4.19%	\$ 1.410710	\$ 2,108,793	4.15%	\$ 1.469206	\$ 2,196,234
East Providence	1,822,773	\$ 1.350858	\$ 2,462,307	9.10%	\$ 1.473815	\$ 2,686,430	4.19%	\$ 1.535559	\$ 2,798,976	4.15%	\$ 1.599232	\$ 2,915,036
Greenville	421,521	\$ 1.350858	\$ 569,415	23.01%	\$ 1.661624	\$ 700,410	4.19%	\$ 1.731236	\$ 729,753	4.15%	\$ 1.803022	\$ 760,012
Kent County	2,727,147	\$ 1.350858	\$ 3,683,989	-1.47%	\$ 1.331021	\$ 3,629,891	4.19%	\$ 1.386783	\$ 3,781,962	4.15%	\$ 1.444286	\$ 3,938,782
Lincoln	1,038,229	\$ 1.350858	\$ 1,402,499	16.87%	\$ 1.578697	\$ 1,639,048	4.19%	\$ 1.644835	\$ 1,707,715	4.15%	\$ 1.713039	\$ 1,778,526
Smithfield	391,600	\$ 1.350858	\$ 528,996	27.97%	\$ 1.728697	\$ 676,958	4.19%	\$ 1.801119	\$ 705,319	4.15%	\$ 1.875803	\$ 734,565
Warwick	3,466,644	\$ 1.350858	\$ 4,682,944	37.17%	\$ 1.853007	\$ 6,423,716	4.19%	\$ 1.930637	\$ 6,692,832	4.15%	\$ 2.010691	\$ 6,970,352
Total Wholesale Revenue	11,362,760		15,349,475	15.84%	\$ 1.564801	17,780,452	4.19%	\$ 1.630357	18,525,350	4.15%	\$ 1.697960	19,293,507

Wholesale (per million gallons) 8,499 \$ 1,805.96 \$ 15,349,475 15.84% \$ 2,091.98 \$ 17,780,452 \$ 2,179.62 \$ 18,525,350 \$ 2,270.00 \$ 19,293,507

Description	Existing Rates			Proposed FY 2021			Proposed FY 2022			Proposed FY 2023		
	Units	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue	% Change	Rates	Revenue
Private Fire Service Charges												
3/4"	2	\$ 8.64	\$ 207	32.06%	\$ 11.41	\$ 274	5.64%	\$ 12.05	\$ 289	5.46%	\$ 12.71	\$ 305
1"	9	\$ 10.21	\$ 1,103	32.03%	\$ 13.48	\$ 1,456	5.64%	\$ 14.24	\$ 1,538	5.46%	\$ 15.02	\$ 1,622
1-1/2"	2	\$ 12.57	\$ 302	32.06%	\$ 16.60	\$ 398	5.64%	\$ 17.54	\$ 421	5.46%	\$ 18.49	\$ 444
2"	68	\$ 18.64	\$ 15,210	32.03%	\$ 24.61	\$ 20,082	5.64%	\$ 26.00	\$ 21,215	5.46%	\$ 27.42	\$ 22,374
4"	391	\$ 79.67	\$ 373,812	32.01%	\$ 105.17	\$ 493,458	5.64%	\$ 111.10	\$ 521,298	5.46%	\$ 117.17	\$ 549,774
6"	1,245	\$ 129.89	\$ 1,940,557	32.00%	\$ 171.46	\$ 2,561,612	5.64%	\$ 181.13	\$ 2,706,135	5.46%	\$ 191.03	\$ 2,853,957
8"	256	\$ 196.73	\$ 604,355	32.00%	\$ 259.69	\$ 797,768	5.64%	\$ 274.34	\$ 842,777	5.46%	\$ 289.33	\$ 888,813
10"	4	\$ 274.06	\$ 13,155	32.00%	\$ 361.76	\$ 17,364	5.64%	\$ 382.17	\$ 18,344	5.46%	\$ 403.05	\$ 19,346
12"	18	\$ 367.64	\$ 79,410	32.00%	\$ 485.29	\$ 104,823	5.64%	\$ 512.67	\$ 110,737	5.46%	\$ 540.67	\$ 116,786
16"	-	\$ 611.43	\$ -	25.58%	\$ 767.86	\$ -	5.64%	\$ 811.18	\$ -	5.46%	\$ 855.49	\$ -
Total		\$ 3,028,110	\$ 3,028,110	32.00%		\$ 3,997,235	5.64%		\$ 4,222,753	5.46%		\$ 4,453,420
Hydrants (Excluding Providence)	3,318	\$ 454.02	\$ 1,506,438	32.00%	\$ 599.31	\$ 1,988,511	5.64%	\$ 633.12	\$ 2,100,699	5.46%	\$ 667.71	\$ 2,215,450
Total Fire Protection Charge Revenue			\$4,534,548.24			\$5,985,745.26			\$6,323,451.92			\$6,668,870.18

Total Rate Revenues		\$ 71,256,053			\$ 83,843,091			\$ 88,310,491		\$ 92,886,154
Miscellaneous Revenues		\$ 1,493,163			\$ 1,493,163			\$ 1,493,163		\$ 1,493,163
Total Revenues		\$ 72,749,216	17.30%		\$ 85,336,254	5.24%		\$ 89,803,654	5.10%	\$ 94,379,317
		-			14,470			15,286		16,121

STATE OF RHODE ISLAND PUBLIC UTILITIES COMMISSION

DOCKET NO. 4994

Response Of The Bristol County Water Authority
 To The Rhode Island Public Utilities Commission's
 Data Requests
 Set 1

CERTIFICATION

I hereby certify that on July 3, 2020, I sent a copy of the within to all parties set forth on the attached Service List by electronic mail and copies to Luly Massaro, Commission Clerk, by electronic mail and First Class Mail.

Parties	E-mail	Phone
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STATE OF RHODE ISLAND PUBLIC UTILITIES COMMISSION

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